

Docket No.: 0425-1062P  
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:  
Takushi YOKOYAMA et al.

Application No.: 10/695,759

Confirmation No.: 6887

Filed: October 30, 2003

Art Unit: 3643

For: GAS GENERATING COMPOSITION

Examiner: J. L. Gellner

DECLARATION UNDER 37 C.F.R. § 1.132  
OF DR. JIANZHOU WU

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Jianzhou WU, declare as follows:

1. I am one of the co-inventors of the subject matter of United States Patent Application No. 10/695,759.
2. I am a citizen of the People's Republic of China, and I am employed by Daicel Chemical Industries, Ltd., Osaka, Japan.
3. I graduated from Tokyo University, with a doctor's degree, in September 1994.
4. I have been working for Daicel Chemical for twelve years, and engaged in researching and developing of gas generating materials for air bag inflators since October 1994 to the present time.

5. I am familiar with the subject matter of U.S. Patent 5,386,775, to Poole, hereinafter referred to as Poole '775.

6. I have carried out additional tests to demonstrate unexpected results of the claimed invention of the instant application over the technology of Poole '775. The test procedures and results are described below.

#### Experiment

A grain of gas generating composition was prepared from guanidine nitrate, basic copper nitrate,  $\text{Al}(\text{OH})_3$ , sodium carboxymethylcellulose, and phosphate glass powder at weight proportions of 41.9, 43.8, 9.8, 2.5, and 2.0, respectively.

#### Experimental results

Calculated combustion temperature of 1390°C

Composition of generated gasses:

NOx            6.7ppm

CO             180ppm

#### Poole's Disclosure

Gas generating composition: 14.10% of guanidine nitrate, 47.9% of strontium nitrate, 8.0% of clay, and 30.0% of potassium 5-aminotetrazole (col. 4, lines 52-55)

Calculated equilibrium temperature: 1821°C (col. 4, line 56)

Composition of generated gasses (col. 4, lines 58-59):

NO             1963ppm

CO             528ppm

Observations

As can be seen from these results, the claimed invention of the present application, as tested above, is substantially superior to the above Poole's showing in terms of low combustion temperature and gas property.

In view of the above, I conclude that the use of the foregoing gas generating composition as claimed in the above-identified application exhibits unexpected results. Moreover, those results are neither taught nor suggested by Poole or any other prior art currently being applied against the claims of the above-identified application.

7. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dec. 22<sup>th</sup>. 2006.  
Date

By Jianzhou Wu  
Jianzhou WU